WILCO CONSTRUCTION COMPANY
"STATE QUALIFIED CONTRACTORS"

Part -3

Data Flow Diagrams

BY,

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Introduction:

This document describes the purpose, scope, background, objectives, assumptions and constraints for the data flow diagrams (DFDs) at Wilco Construction Company. The DFDs are graphical representations of the data processes and flows within the company's information system. They are intended to provide a clear and comprehensive overview of how the system functions and interacts with external entities.

Purpose:

The purpose of the DFDs is to:

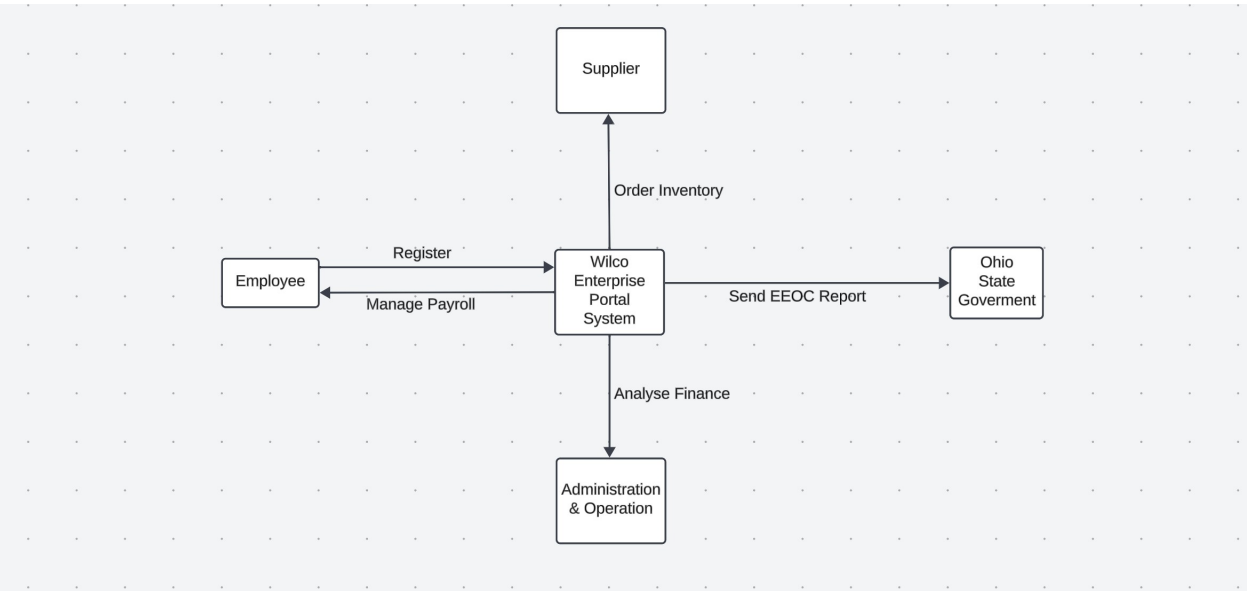
- Analyze the current state of the company's information system and identify its strengths and weaknesses.
- Design a new or improved system that meets the company's requirements and expectations.
- Communicate the system design to the stakeholders, developers, testers, and users.
- Document the system design for future reference and maintenance.

Scope of Wilco:

The scope of the DFDs covers the following aspects of the company's information system:

- The main processes and sub-processes that handle the data within the system.
- The data sources, destinations, stores, and flows that connect the processes.
- The external entities that interact with the system, such as customers, suppliers, contractors, and regulators.
- The levels of detail and abstraction show the system from different perspectives.

Context Level Data Flow Diagram:



Process: This system interacts with external entities such as employees, suppliers, and the Ohio State Government. Employees use the system to register and handle payroll tasks while suppliers utilize it to place orders for inventory. The system also generates reports for the Equal Employment Opportunity Commission (EEOC) that are sent to the Ohio State Government. Moreover, there is a process within the system that analyzes aspects presumably supporting its operational and administrative functions. The DFD presented here illustrates the main interactions and processes of this system showing how data is exchanged among internal stakeholders.

External Entities:

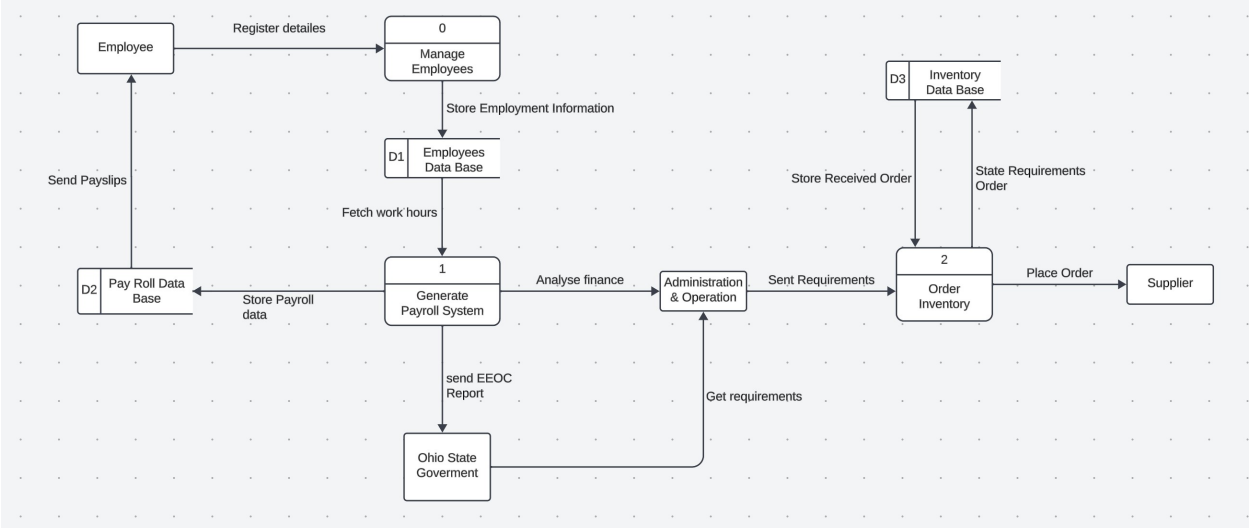
- **Employee:** It's a user or operator of the system who can register and manage payroll.
- **Supplier**: It's interacting with the system to order inventory.
- **Ohio State Government:** It receives EEOC reports from the system.

Data Flow:

- **Register:** This is where employees give information to the system when they sign up or update their details. It's like filling out a form to let the system know who they are and other important details about them.
- **Manage Payroll:** This flow involves all the details about how much employees are paid, when they are paid, and possibly their tax information. It's the system taking care of all the details around getting employees their paychecks correctly and on time.
- **Order Inventory:** This is the communication line between the suppliers and the system, where the suppliers tell the system what items they are sending. It's like a list of goods that are being ordered to keep the company stocked up.
- **Send EEOC Report:** This is a specific type of report that the system sends to the Ohio State Government. It contains information about the company's employees, like their job positions, to comply with employment laws.
- **Analyze Finance:** It takes a close look at all the financial information, like earnings, expenses, and more, to understand the financial health of the company.

Level-0 Data Flow Diagram:

The context-level diagram below represents the external entities and their relationship with the central system. In the given case study of WILCO Company, the below diagram indicates the higher-level information on the kind of people involved and their interaction with the Wilco enterprise portal system.



External entities:

Employee, Government, Supplier, Admin & operations team.

Process:

The employee registers on the System and logs in his respective work hours. The Admin & Operations team will use the system to compute and manage the payroll of the employees. The requirements for the inventory such as concrete steel, paving material, and paint are ordered to the Supplier through the portal. The bi-weekly EEOC Compliance reports which comprise work hours of visible minorities and women are reported to the Ohio State Government via the system.

Datastores:

- **Employee database(D1):** A storage area in the system where all the details about the employees are kept.
- **Inventory database(D2):** A place within the system that keeps track of what supplies are in stock and what needs to be ordered.
- **Payroll data(D3):** Where the system stores information related to the employees' pay.
- **Manage Employees(P0):** The manage Employees process will be used by the WILCO employees to register and store their details in the Employee datastore.
- **Generate Payroll & Reports(P1):** This process handles the financial information of WILCO Company. It calculates the payroll of each employee against their work hours and skill classification along with visible minority and gender considerations. Such details are fetched from the employee datastore. This system also generates the bi-weekly EEOC Compliance reports which will be shared with the Ohio State Government. The generated payroll data is stored by this process in the payroll datastore. Pay slips are thus sent to each employee.
- **Order Inventory(P2):** This process handles the inventory of WILCO Company. It receives the requirements from the Admin & Operations team. It stores the information on the

inventory datastore and places orders to the suppliers. The received inventory details are again stored in the datastore.

Data Flows:

- **Register details:** Information that new employees give to the system when they start or when their details change.
- **Store Employment Information:** Keeping a record of all the job-related details of the employees.
- **Fetch work hours:** The system's way of finding out how many hours each employee has worked.
- **Store Payroll data:** Safely keeping the information that's needed to pay employees correctly.
- **Send Payslips:** The digital or physical slips that tell employees how much they've been paid.
- **Analyze finance:** A deep dive into the company's money matters to understand where it stands financially.
- **Send EEOC Report:** Special reports sent to the government to comply with employment laws.
- **Store Received Order:** Keeping track of what orders have been placed for supplies.
- **State Requirements Order:** What the company tells the system it needs to keep running.
- **Sent Requirements:** The list of supplies that the company tells suppliers it needs.
- **Get requirements:** The system figuring out what supplies are needed before an order is placed.

Conclusion:

Data flow diagrams (DFDs) were used to conduct a thorough analysis of the Wilco Construction Company EEOC system. While the context-level DFD provided an overview of the system's interactions with outside entities, the level-0 DFD provided a comprehensive look into internal processes and data flows. The DFDs successfully identified all relevant operations, external entities, data storage, and data flows by utilizing Gane and Sarson symbols. These designs are well-positioned to provide a strong basis for system improvement in upcoming projects, guaranteeing the system's efficiency and success in addressing EEOC complaints. The report's clear and concise presentation of the analysis's conclusions is the result of the usage of Gane and Sarson notation in conjunction with a suitable writing style. To sum up, this research demonstrates that it is an invaluable tool for everyone participating in the development and operation of the EEOC system for Wilco Construction Company.